

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MANABU SUHARA, KAZUO SUNAHARA,
NAOSHI SAITOH and TSUTOMU KATOH

Appeal 2006-2562
Application 10/089,109
Technology Center 1700

Decided: November 16, 2006

Before PAK, KRATZ, and TIMM, *Administrative Patent Judges*.

PAK, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the Examiner's final rejection of claims 1, 2, 4 and 7 through 14. Claim 3, the remaining claim in the above-identified application, stands withdrawn from consideration by the Examiner as being directed to a non-elected invention.¹ We have jurisdiction pursuant to 35 U.S.C. § 134.

¹ As is apparent from the Answer, the Brief and the Reply Briefs, the Examiner inadvertently indicated in the Advisory Action dated April 13, 2005 that claim 4 was withdrawn from consideration.

I. APPEALED SUBJECT MATTER

The subject matter on appeal is directed to a particular hexagonal lithium-cobalt composite oxide used in secondary batteries (Specification 1). This composite oxide is said to improve cycle durability and low temperature operation efficiency of the secondary batteries (Specification 5). Further details of the appealed subject matter are recited in representative claims 1, 2, 4, 12, 13, and 14 which are reproduced below:

1. A hexagonal lithium-cobalt composite oxide for a lithium secondary cell, which is represented by the formula $\text{LiCo}_{1-x}\text{M}_x\text{O}_2$, wherein x is $0 \leq x \leq 0.02$ and M is at least one member selected from the group consisting of Ta, Ti, Nb, Zr and Hf, and which has a half-width of the diffraction peak for (110) face at $2\theta=66.5\pm 1^\circ$, of from 0.070 to 0.180° , as measured by the X-ray diffraction using CuK_α as a ray source.
2. The hexagonal lithium-cobalt composite oxide for a lithium secondary cell according to Claim 1, wherein x is $0.0005 \leq x \leq 0.02$, and the half-width of the diffraction peak for (110) face is from 0.100 to 0.165° .
4. The hexagonal lithium-cobalt composite oxide for a lithium secondary cell according to Claim 1, wherein the packing press density of the hexagonal lithium-cobalt composite oxide is from 2.90 to 3.35 g/cm^3 .
12. The hexagonal lithium-cobalt composite oxide for a lithium secondary cell according to Claim 1, which is obtained by a process which comprises dry blending a cobalt oxyhydroxide powder having an average particle size of from 1 to $20 \text{ }\mu\text{m}$ and a specific surface area of from 2 to $200 \text{ m}^2/\text{g}$, a lithium carbonate powder having an average particle size of from 1 to $50 \text{ }\mu\text{m}$ and a specific surface area of from 0.1 to $10 \text{ m}^2/\text{g}$, and a powder of an oxide of metal element M having an average particle size of at most $10 \text{ }\mu\text{m}$ and a specific surface area of

from 1 to 100 m²/gm, and firing the mixture at a temperature of from 850 to 1,000°C in an oxygen-containing atmosphere.

13. A hexagonal lithium-cobalt composite oxide for a lithium secondary cell, which is represented by the formula LiCo_{1-x}M_xO₂, wherein x is $0 \leq x \leq 0.02$ and M is at least one member selected from the group consisting of Ta, Ti, Nb, Zr and Hf, and which has a half-width of the diffraction peak for (110) face at $2\theta=66.5 \pm 1^\circ$, of from 0.070 to 0.180°, as measured by the X-ray diffraction using CuK_α as a ray source

14. The hexagonal lithium-cobalt composite oxide for a lithium secondary cell according to Claim 13, which is obtained by a process which comprises dry blending a cobalt oxyhydroxide powder having an average particle size of from 1 to 20 μm and a specific surface area of from 2 to 200 m²/g, a lithium carbonate powder having an average particle size of from 1 to 50 μm and a specific surface area of from 0.1 to 10 m²/g, and a powder of an oxide of metal element M having an average particle size of at most 10 μm and a specific surface area of from 1 to 100 m²/gm, and firing the mixture at a temperature of from 850 to 1000°C in an oxygen-containing atmosphere.

II. EVIDENCE

As evidence of unpatentability of the claimed subject matter, the Examiner relies upon the following references:

Toyoguchi	US 5,147,738	Sep. 15, 1992
Mitate	US 5,702,843	Dec. 30, 1997
Masashi	JP 10-001316	Jan. 6, 1998 ²
Yamahira	US 5,709,969	Jan. 20, 1998
Suhara ('205)	US Application 10/296,205	Nov. 29, 2002
Suhara ('479)	US Application 10/743,479	Dec. 23, 2003

² Our reference to Masashi (Japanese document) is to the English translation of record provided by the Examiner.

III. REJECTION

The appealed claims stand rejected or provisionally rejected as follows³:

- 1) Claims 1, 2, and 7 through 14 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Masashi;
- 2) Claims 1, 2, 7, and 10 through 14 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Toyoguchi;
- 3) Claim 4 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of either Toyoguchi or Masashi, and Yamahira;
- 4) Claims 8 and 9 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Toyoguchi and Mitate;
- 5) Claims 1, 2, 7, 10, and 12 through 14 under the judicially created doctrine of obviousness-type double patenting as provisionally unpatentable over the claims of copending Application 10/296,205 (Suhara '205);
- 6) Claim 4 under the judicially created doctrine of obviousness-type double patenting as provisionally unpatentable over the claims of copending Application 10/296,205 (Suhara '205) in view of Yamahira;
- 7) Claims 8, 9, and 11 under the judicially created doctrine of obviousness-type double patenting as provisionally unpatentable over the

³ The Examiner has not repeated the provisional double patenting rejection of claims 1 through 11 under 35 U.S.C. § 101 based on the claims of copending Application 10/743,479 as set forth in the Final Office Action dated January 14, 2005. Thus, we presume that this rejection stands withdrawn. *Ex parte Emm*, 118 USPQ 180 (Bd. App. 1957).

claims of copending Application 10/296,205 (Suhara '205) in view of Masashi; and

8) Claims 12 through 14 under the judicially created doctrine of obviousness-type double patenting as provisionally unpatentable over the claims of copending Application 10/743,479 (Suhara '479).

IV. FINDINGS AND CONCLUSIONS

We have carefully considered the claims, Specification and prior art references, including the arguments advanced by both the Appellants and the Examiner in support of their respective positions. This review has led us to conclude that the Examiner's rejections are well founded. Accordingly, we will sustain the Examiner's decision rejecting claims 1, 2, 4, 7, and 8 through 14 for the factual findings and conclusion set forth in the Answer and below.

REJECTIONS (1) AND (2)⁴

As evidence of unpatentability of the subject matter defined by representative claims 1, 2, 12, 13, and 14 under 35 U.S.C. §102(b), or alternatively under 35 U.S.C. §103(a), the Examiner relies on the disclosure of either Masashi or Toyoguchi. There is no dispute that Masashi and Toyoguchi disclose a lithium cobalt composite oxide for a lithium secondary cell. Compare Answer 3-17 with Brief 8-13, Reply Brief 1-5, and Second Reply Brief 1-6. We find that Masashi not only teaches a lithium cobalt composite oxide formula $\text{LiCo}_{1-x}\text{M}_x\text{O}_2$ which encompasses the lithium cobalt oxide formulas recited in claims 1, 2, 12, 13, and 14, but also teaches

⁴ The Appellants only argue the patentability of the limitations recited in claims 1, 2, 12, and 14. Claim 14, however, is dependent on independent claim 13. Therefore, for purposes of this appeal, we focus our discussion on claims 1, 2, 12, 13, and 14.

$\text{LiCo}_{0.99}\text{Ta}_{0.01}\text{O}_{2.01}$ which is essentially identical to the lithium cobalt composite oxide formula recited in claims 1, 2, 12, 13 and 14. *See* Paragraphs 0009 and 0013. We find that Masashi teaches forming a lithium cobalt composite oxide particle having a specific surface area in the range of $1\text{-}50\text{ m}^2/\text{g}$ by heating a mixture of cobalt oxyhydroxide precipitates, a lithium hydroxide solution and a Ti or Ta solution. *See* Paragraphs 0030-0060. The resulting lithium cobalt composite oxide is subsequently fired at a temperature of 900°C . *See* Paragraph 0064.

We find that Toyoguchi also teaches mixing lithium carbonate, cobalt carbonate and Ta or Ti oxide and heating the resulting mixture at 900°C for 10 hours to form $\text{LiCo}_{0.98}\text{Ta}_{0.02}\text{O}_2$, $\text{LiCo}_{0.98}\text{Ti}_{0.02}\text{O}_2$, and $\text{LiCo}_{0.98}\text{Nb}_{0.02}\text{O}_2$ having hexagonal crystal lattice, which are encompassed by the lithium cobalt composite oxide formulas recited in claims 1, 2, 12, 13, and 14. *See* column 2, Example 1, column 4, Table 3 and column 5, Tables 4 and 5.

As is apparent from the Examiner's findings at pages 3-8 and 10-15 of the Answer, neither Masashi nor Toyoguchi mentions "a half-width of the diffraction peak for (110) face at $2\theta=66.5\pm 1^\circ$, of from 0.070 to 0.180° , as measured by the X-ray diffraction using CuK_α as a ray source" recited in claims 1, 2, 12, 13 and 14. However, due to similarity of making (mixing and calcining to form oxides) and using the claimed and prior art lithium cobalt composite oxides and due to the same identity in terms of the claimed and prior art lithium cobalt composite oxide formulations or formulas, it is reasonable for the Examiner to shift the burden to the Appellants to show that the prior art lithium cobalt composite oxides do not possess the claimed diffraction peak at the claimed particular face and angle. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990), *citing In re*

Papesch, 315 F.2d 381, 391, 137 USPQ 43, 51 (CCPA 1963) (“Product of identical chemical composition can not have mutually exclusive properties.”). As held by the predecessor to our reviewing court in *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977):

Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product... Whether the rejection is based on “inherency” under 35 USC § 102, on “prima facie obviousness” under 35 USC § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products. (Footnotes and citations omitted).

This approach precludes issuing a patent on an old product based on a mere recitation of its latent property. *Spada*, 911 F.2d at 708, 15 USPQ2d at 1657 (“The discovery of a new property or use of a previously known composition, even when that property and use are unobvious from prior art, can not impart patentability to claims to the known composition.”).

The Appellants argue that the claimed diffraction peak at the claimed particular face and angle varies with changes in firing temperatures, particle sizes, specific surface areas and types of cobalt and lithium compounds as starting materials. *See*, e.g., Brief 6-7, Reply Brief 2-3, and Second Reply Brief 2-4. In support of this argument, the Appellants refer to some of the examples in the Specification. *See* Brief 6-7, Reply Brief 2-3, and Second Reply Brief 2-4. We are not persuaded by this argument and evidence that the lithium cobalt composite oxide particles taught by Masashi and Toyoguchi does not possess the claimed diffraction peak.

As indicated *supra*, Masashi and Toyoguchi employ the same or substantially the same firing temperature (900°C) as those exemplified in the specification. At this firing temperature, the cobalt and lithium compounds exemplified in the specification and in Masashi and Toyoguchi are all converted to oxides as is apparent from the resulting formulas defining the claimed and prior art lithium cobalt composite oxide particles. As is also apparent from the resulting lithium cobalt composite oxide formulas and its utility in forming lithium secondary cells, the cobalt and lithium compounds taught by Masashi and Toyoguchi must necessarily be sized such that they are sufficiently mixed to form lithium cobalt composite oxide particles having sizes appropriate for forming lithium secondary cells. Moreover, it can be inferred from Masashi's above-mentioned conventional specific surface area of lithium cobalt composite oxide particles useful for lithium secondary cells that the sizes and specific surface areas of the cobalt and lithium compounds employed must necessarily be within the range described in the Appellants' Specification. Indeed, the examples in the Specification show that so long as lithium cobalt composite oxides useful for lithium secondary cells have the Appellants' lithium cobalt composite oxide formulas, they all have the claimed diffraction peak at the claimed particular face and angle even when the firing temperatures are varied by 130°C, even when different cobalt compounds (cobalt oxyhydroxide and cobalt oxide) are employed as starting materials and even when different average particle sizes and different specific surface areas are employed. *See* Specification 16-36, Examples 1-16. The examples in the Specification show that the claimed diffraction peak is not obtained only if lithium cobalt composite oxides having formulas different from those claimed are used. Thus, from

our perspective, the examples relied upon by the Appellants further support, rather than negate, the Examiner's position. *Id.*

The Appellants appear to further separately argue the process limitations recited in claims 12 and 14. However, for the reasons indicated *supra* and in the Answer, we are not convinced that the Appellants have demonstrated that the process limitations recited in claims 12 and 14 would have rendered the claimed lithium cobalt composite oxides patentably distinct from those taught by Masashi and Toyoguchi. As stated by our reviewing court in *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985):

[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. (Citations omitted).

In view of the factual findings set forth above and in the Answer, we concur with the Examiner that Masashi and Toyoguchi would have rendered the claimed subject matter unpatentable within the meaning of 35 U.S.C. § § 102(b) and 103(a). Accordingly, we affirm the Examiner's decision rejecting claims 1, 2, and 7 through 14 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Masashi and rejecting claims 1, 2, 7, and 10 through 14 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over the disclosure of Toyoguchi.

REJECTION (3)

As evidence of obviousness of the subject matter defined by claim 4 under 35 U.S.C. § 103(a), the Examiner relies on the combined disclosures of either Masashi or Toyoguchi, and Yamahira. The relevant disclosures of Masashi and Toyoguchi are discussed above. According to the Examiner (Answer 9-10 and 15-17), they are silent with respect to the packing density of lithium cobalt composite oxides (lithium compounds) useful for lithium secondary cells.

The dispositive question is, therefore, whether it would have been obvious to optimize the packing density of the lithium compound (lithium cobalt composite oxide) taught by Masashi or Toyoguchi. On this record, we answer this question in the affirmative.

Under 35 U.S.C. § 103, the obviousness of an invention cannot be established by combining the teachings of the prior art references absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). This does not mean that the cited prior art references must specifically suggest making the combination. *B.F. Goodrich Co. v. Aircraft Braking Systems Corp.*, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996); *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988). Rather, the test for obviousness is what the combined teachings of the prior art references would have suggested to those of ordinary skill in the art. *In re Young*, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In evaluating the prior art references for a suggestion, it is proper to take into account not only the

specific teachings of the references, but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

Applying the above obviousness test to the present circumstance, we determine that the prior art references as a whole would have suggested the claimed subject matter within the meaning of 35 U.S.C. §103. As indicated at column 2, line 34 to column 3, line 6 of Yamahira, optimizing the packing density of a sintered (fired) lithium compound for lithium secondary cells (inclusive of the lithium cobalt composite oxides of Masashi and Toyoguchi) improves the performance of the electrodes formed therefrom. This packing density, which is defined in terms of a volumetric density, includes the density recited in claim 4. *See* column 3, line 56 to column 4, line 2. The density recited in claim 4 is said to be an optimum density for lithium secondary cells. *Id.*

Thus, notwithstanding the Appellants' arguments to the contrary, we concur with the Examiner that providing an optimum packing density, such as that claimed, for the lithium compound taught by Masashi or Toyoguchi for purposes of optimizing lithium secondary cells would have been well within the ambit of one of ordinary skill in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980)("[D]iscovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art."). This is especially true in this situation since one of ordinary skill in the art would have been led to employ the claimed packing density, motivated by a reasonable expectation of successfully obtaining the advantageous properties taught by Yamahira.

Accordingly, for the reasons set forth above and in the Answer, we affirm the Examiner's decision rejecting claim 4 under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of either Masashi or Toyoguchi, and Yamahira.

REJECTION (4)⁵

As evidence of obviousness of the subject matter defined by claims 8 and 9 under 35 U.S.C. § 103(a), the Examiner relies on the combined disclosures of Toyoguchi and Mitate. The relevant disclosure of Toyoguchi is discussed above. According to the Examiner (Answer 17-19), Toyoguchi does not mention using a current collector to support its positive electrode material.

To remedy this deficiency, the Examiner relies on the disclosure of Mitate. *Id.* The Examiner finds that Mitate teaches that providing a current collector to facilitate electron transfer to and from the electrode is known. *Id.* The Examiner then concludes that one of ordinary skill in the art would have been led to employ a current collector to support the positive electrode taught by Toyoguchi, motivated by a reasonable expectation of successfully facilitating electron transfer to and from the electrode. *Id.*

The Appellants do not dispute the Examiner's finding and conclusion of obviousness regarding the employment of a current collector to support the positive electrode taught by Toyoguchi. *See, e.g.,* Brief 14. The Appellants only argue that the same arguments raised above apply to this rejection as well. *Id.* Accordingly, for the reasons set forth above and in the Answer, we also affirm the Examiner's decision rejecting claims 8 and 9

⁵ The Appellants do not separately argue the patentability of the limitations recited in claims 8 and 9. Therefore, we limit our discussion to claim 8.

under 35 U.S.C. § 103(a) as unpatentable over the combined disclosures of Toyoguchi and Mitate.

REJECTION (5)⁶

The Examiner has provisionally rejected claims 1, 2, 7, 10, and 12 through 14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of copending Application 10/296,205. *See* Answer 19. As acknowledged by the Appellants (Br. 15), claim 1 of copending Application 10/296,205 recites:

A lithium-transition metal composite oxide which comprises particles of a lithium composite oxide represented by the formula $\text{Li}_x\text{M}_{1-y}\text{N}_y\text{O}_2$, wherein $0.2 \leq x \leq 1.2$, $0 \leq y \leq 0.7$, M is a transition metal element, and N is a transition metal element other than M or an alkaline earth metal element....

Dependent claim 8 of copending Application 10/296,205, which encompasses all of the limitations recited in claim 1, further recites:

The lithium-transition metal composite oxide according to Claim 1, wherein M is Co, the half width of the diffraction peak for (110) face at $2\theta=66.5\pm 1^\circ$, of from 0.080 to 0.180° as measured by the X-ray diffraction using CuK_α as a ray source, N is at least one member selected from the group consisting of Ti, Zr, Hf, V, Nb and Ta, and y is $0.0005 \leq y \leq 0.02$.

Thus, the Examiner has correctly determined that the subject matter recited in claims 1, 2, 7, 10 and 12 through 14 is patentably indistinct from the claims of copending Application 10/296,205.

The Appellants only specifically argue that “the claimed subject matter in copending application ‘205 requires particular values of the

⁶ The Appellants do not separately argue the patentability of the rejected claims. Therefore, for purposes of this appeal, we limit our discussion to claim 1 on appeal.

inclination of the distribution curve of the cumulative volume particle size of the lithium composite oxide, one at a cumulative volume fraction of 20%, and one at a cumulative volume fraction of 80%” which are not recited in appealed claim 1. *See, e.g.,* Brief 15 and Second Reply Brief 5. However, nothing in the language of appealed claim 1 precludes such lithium cobalt composite oxide particle distribution characteristics recited claims 1 and 8 of copending Application 10/296,205. *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1327, 52 USPQ2d 1590, 1595 (Fed. Cir. 1999)(“[T]he failure to claim anything with respect to characteristics of one outer surface of the board does not distinguish these claims.”). In fact, as is apparent from claims 7 and 8 reciting additional features for the lithium cobalt composite oxide recited in claim 1, for example, the claims on appeal, including claim 1, are open to additional features which are not specifically recited.

Accordingly, for the reasons set forth above and in the Answer, we affirm the Examiner’s decision provisionally rejecting claims 1, 2, 7, 10, and 12 through 14 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over the claims of copending Application 10/296,205.

REJECTION (6)

The Examiner has provisionally rejected Claim 4 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/296,205 in view of Yamahira. *See* Answer 24. Rather than contesting the Examiner’s determination regarding obviousness of providing the claimed packing density taught by Yamhira to the lithium cobalt composite oxide recited in copending Application 10/296,205, the Appellants merely argue that “Yamahira does not remedy

any of the deficiencies discussed above...” *See, e.g.,* Brief 15. Thus, for the reasons already discussed above and in the Answer, we also affirm the Examiner’s decision provisionally rejecting claim 4 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/296,205 in view of Yamahira.

REJECTION (7)⁷

The Examiner has provisionally rejected claims 8, 9, and 11 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/296,205 in view of Masashi. *See* Answer 25. The relevant content of the claims of copending Application 10/296,205 is discussed above. According to the Examiner (Answer 26), the claims of copending Application 10/296,205 do not recite the current collector and the electrolyte solvent recited in claims 8, 9 and 11 of the present application. To account for these deficiencies, the Examiner relies on the disclosure of Masashi. *Id.* The Examiner finds that Masashi teaches the claimed current collector and electrolyte solvent. *Id.* The Examiner then concludes that it would have been obvious to employ such current collector and electrolyte solvent in the invention recited in the claims of copending Application 10/296,205. *Id.*

The Appellants do not contest the Examiner’s finding and conclusion regarding obviousness of modifying the lithium cobalt composite oxide electrode recited by copending Application 10/296,205 by employing the claimed current collector and electrolyte solvent taught by Masashi. (Br.

⁷ The Appellants do not separately argue the patentability of the rejected claims. Therefore, for purposes of this appeal, we limit our discussion to claim 8.

16). The Appellants only argue that Masashi “does not remedy any of the deficiencies discussed above... “ *Id.* Thus, for the reasons already discussed above and in the Answer, we affirm the Examiner’s decision provisionally rejecting claims 8, 9, and 11 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/296,205 in view of Masashi.

REJECTION (8)⁸

The Examiner has provisionally rejected claims 12 through 14 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/743,479. *See* Answer 26-27. Claim 5 of copending Application 10/743,479 recites:

A process for producing a hexagonal lithium-cobalt composite oxide for a lithium secondary cell, which comprises:
dry blending a cobalt oxyhydroxide powder having an average particle size of from 1 to 20 μm and a specific surface area of from 2 to 200 m^2/g , a lithium carbonate powder having an average particle size of from 1 to 50 μm and a specific surface area of from 0.1 to 10 m^2/g , and a powder of an oxide of metal element M having an average particle size of at most 10 μm and a specific surface area from 1 to 100 m^2/g ; and
firing a mixture of the powders at a temperature of from 850 to 1,000°C in an oxygen-containing atmosphere,
wherein the hexagonal lithium-cobalt composite oxide is represented by the formula $\text{Li}_x\text{Co}_{1-x}\text{M}_x\text{O}_2$, wherein x is $0.0005 \leq x \leq 0.02$ and M is at least one member selected from the group consisting of Ta, Ti, Nb, Zr and Hf, and which has a half-width

⁸ The Appellants do not separately argue the patentability of the rejected claims. Therefore, for purposes of this appeal, we limit our discussion to claim 12. In the event of further prosecution of the claimed subject matter, the Examiner should consider extending an obviousness-type double patenting rejection based on the claims of copending Application 10/743,479 to other product claims in this present application.

of the diffraction peak for (110) face at $2\theta=66.5\pm 1^\circ$, of from 0.070 to 0.180° , as measured by the X-ray diffraction using $\text{CuK}\alpha$ as a ray source.

In comparing claim 5 of copending Application 10/743,479 with claims 12 through 14 of the present application, it is readily apparent that claim 5 of copending Application 10/743,479 recites process limitations identical to the process limitations of product-by-process claims 12 and 14 of the present application and recites product limitations identical to or encompassed by product claims 1 and 13 of the present application. Thus, we concur with the Examiner that the claims of copending Application 10/743,479 would have rendered the subject matter recited in claims 12 through 14 of the present application patentably indistinct. *See Miller v. Eagle Mfg. Co.*, 151 U.S. 186, 14 S.Ct. 310 (1894); *Mosler Safe & Lock Co. v. Mosler, Bahmann & Co.*, 127 U.S. 354, 8 S.Ct. 1148 (1888). Accordingly, we affirm the Examiner's decision provisionally rejecting claims 12 through 14 under the judicially created doctrine of obviousness-type double patenting as unpatentable over the claims of copending Application 10/743,479.

V. CONCLUSION

The decision of the Examiner is affirmed.

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Application 10/089,109

VI. TIME PERIOD

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. §1.136(a).

AFFIRMED

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